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SCIENTIFIC CAREERS IN

FILE COPY SOIL AND WATER CONSERVATION RESEARCH

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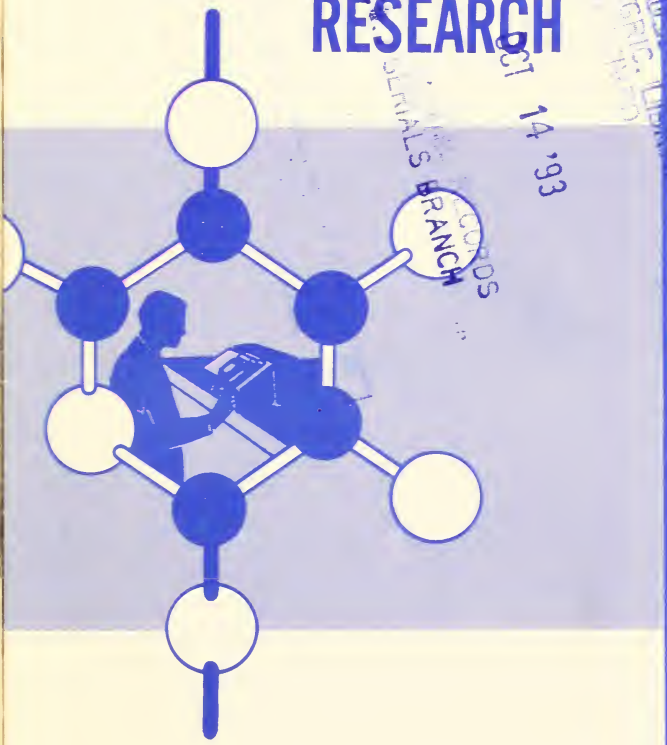

Miscellaneous Publication No. 850
Agricultural Research Service
U.S. Department of Agriculture

SCIENTIFIC CAREERS in So

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search that would contribute to con-
serving the soil and water resources
of the United States? Have you
taken college courses that will
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If so, you may be interested
in employment in the Agricultural
Research Service (ARS) of the U.S.
Department of Agriculture. In ARS,
the Soil and Water Conservation Re-
search Division uses well-trained
research scientists: soil scientists,
chemists, physicists, plant physiol-
gists, geologists, and agricultural, ir-
rigation, and hydraulic engineers.

This leaflet names the fields of
research in which the Soil and Water
Conservation Research Division is
active. It also lists salaries and job
benefits, summarizes qualification
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l and Water Conservation Research

BN–7880X

Hydrologist evaluates watershed runoff.

N–15858

Soil scientists follow nutrient translocation in plants.

SCIENTIFIC CAREERS in Soil and Water Conservation Research

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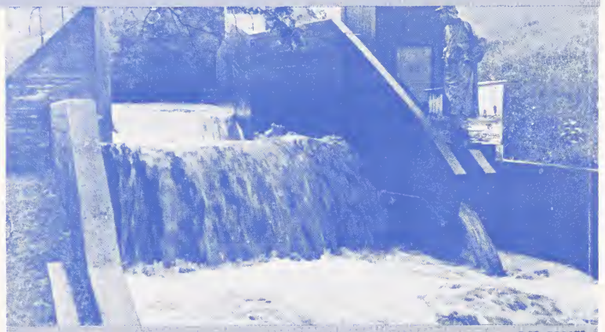

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Research is conducted in these fields:

SOIL AND WATER MANAGEMENT. Soil chemistry and atomic contamination; soil physics; soil microbiology; methods of cultivation, irrigation, drainage, crop management and rotation; soil-water-plant relationships; factors involved in producing crops of high nutritive value; runoff and soil loss prediction, measurement, and control; water quality and land reclamation in relation to salinity control; engineering aspects of drainage and irrigation. *This work requires—*

Soil scientists, chemists, physicists, plant physiologists, agricultural engineers, and hydraulic engineers.

WATERSHED ENGINEERING. Stream and reservoir sedimentation; watershed runoff; channel stability; hydraulics of structures; aquifer-streamflow relationships; hydrographic analysis. *This work requires—*

Hydraulic engineers, agricultural engineers, soil scientists, geologists, and ecologists.

Nature of the work

SOIL SCIENTIST. Performs research in chemical, physical and microbiological properties of plants and soils; soil management practices to improve crops, including fertilizing, green manuring, liming, tilling, managing residues, irrigating, and draining; methods of evaluating physical and chemical conditions of soil affecting crop production.

CHEMIST. Performs research in chemical characteristics and interrelationships between soils, water, plants, and plant nutrients; use of soil amendments by plants; basic research in plant nutrient availability, salinity control, toxicity problems.

PHYSICIST. Performs research in physical characteristics of soils, water, and soil amendments; effects of soil amendments on soil structure; effects of green-manure crops on soil structure; drainage, irrigation, root penetration, moisture-intake capacity, and erodibility.

PLANT PHYSIOLOGIST. Performs research in effects on plants of light, temperature, moisture, nutrients, and natural and applied chemicals; physical and chemical properties and composition of plants as related to soil and atmospheric environment.

ENGINEER. Performs research in design and construction of dams for flood prevention and water storage; makes hydrologic studies; develops methods of tillage and residue management; sedimentation investigations; erosion control, water control and water supply structures; drainage; irrigation; streambank protection works; canals; waterways; terraces.

EMPLOYMENT INFORMATION

Most of these positions are in the Federal competitive civil service. Appointments are made from lists of persons who qualify through appropriate civil service examinations. Some examinations require written tests; others require an evaluation of your education, training, and experience. All qualified applicants are considered without regard to race, creed, color, sex, or national origin.

You may obtain announcements of civil service examinations and application forms from your college placement officer or from the Personnel Division, Agricultural Research Service, U.S. Department of Agriculture, Washington, D.C., 20250. The announcements will give detailed information on employment requirements.

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Qualifications and salaries

The following summary applies to requirements for filling most of the professional research positions.

Grades	*Salaries*	*Requirements*
GS–5	$5,181	Bachelor's degree in appropriate field, with specific courses as described in the examination announcement, and pass a written test.
GS–7	$6,269	Bachelor's degree plus 1 year of appropriate graduate work (30 semester hours), or Bachelor's degree plus 1 year of progressive research experience, or Bachelor's degree with college average of "B" or better, standing in upper 25 percent of class, or other specified scholastic achievement.
GS–9	$7,479	Bachelor's degree plus (*a*) 2 years of appropriate graduate work (60 semester hours), or (*b*) 2 years of progressive research experience, or Completion of all requirements for the master's degree in an appropriate field within the last 2 years, and demonstrated superior ability in graduate studies.
GS–11	$8,961	Completion of all requirements for the Ph. D. degree; or 3 years of progressively responsible research experience (or appropriate

combination of experience and education) beyond the bachelor's degree level.

GS–12....$10,619.... Completion of all requirements for the Ph. D. degree in an appropriate field within the last 2 years, and demonstrated superior ability in graduate studies; or 3 years of progressively responsible, highly specialized research experience (or appropriate combination of experience and education) beyond the bachelor's degree level.

Some undergraduates are employed by ARS as student assistants for full-time summer work and for part-time work during the school year. High school graduates who have been accepted by or enrolled in an accredited college or university in an appropriate curriculum may be eligible for appointment at the rate of $3,814 a year;

SOIL AND WATER CONSERVATION RESEARCH DIVISION

students with one full academic year of college, at $4,149 a year; students with 2½ full academic years of college, at $4,641 a year.

Work locations: The Division employs scientists at its headquarters in Beltsville, Md.; at two Bankhead-Jones laboratories, Ithaca, N.Y., and Riverside, Calif.; and at over 90 field locations throughout the United States.

Professional Growth and Recognition

Creative research environment.
Modern research facilities.
Association with outstanding scientists.
Interdisciplinary associations.
Individual professional recognition.
Authorship credit for original research.
Advanced training encouraged.

Job Benefits

Promotion based on achievement.
Regular salary increases.
5-day, 40-hour workweek.
Promotion-from-within policy.
Liberal vacation and sick leave with pay.
Excellent retirement system.
Low-cost life and health insurance.

RESEARCH SCIENTISTS UTILIZED:

Soil Scientists
Chemists
Geologists
Physicists
Plant Physiologists
Agricultural Engineers
Hydraulic Engineers

Revised December 1965

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